

## Differences in COVID-19 mortality between pandemic phases in a southern Italian region

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### Background:

Overall mortality is a relevant indicator of the population burden during COVID-19 pandemic, reflecting the overload and preparedness of the healthcare system. This study aimed to analyse the distribution of deaths in SARS-CoV-2 positive patients between pandemic phases and to evaluate the characteristics of COVID-19 patients deceased during the year.

### Methods:

Data on confirmed COVID-19 cases were collected from the recording system of the Department of Prevention of the Local Health Authority of Abruzzo Region, Italy. The course of the epidemic was stratified in 4 phases: the first wave (March-May 2020), the low incidence phase (June-September 2020), the second wave (October 2020-December 2021), and the variants spread phase in our region (January-March 2021).

### Results:

From March 2020 to March 2021 we registered 17,082 cases of SARS-CoV-2 infection, of these patients 571 (3.35%) had a fatal outcome. The mortality was the highest during the first 'peak' phase, interesting the 14.20% of the notified cases, and the lowest during the last phase (2.50%). Mortality due to COVID-19 mainly affected men (54.99%) and geriatric patients (median age: 84; IQR: 75-90). Women dying for SARS-CoV-2 infection had a more advanced median age (87; IQR: 79-92) than men (81; IQR: 73-87). The lowest median age was registered in patients deceased during the low incidence phase (75.5; IQR: 71-82). The median time span, in days, from a SARS-CoV-2 positive test to death was significant lower in the phase 1 (days:10; IQR:4-20) than in phase 4 (days:14; IQR:8-22) ( $p < 0.001$ ).

### Conclusions:

Our results showed that mortality markedly decreased during the COVID-19 epidemic, and this could be likely related to an improved organisation and delivery of care, in addition to a better knowledge of disease treatment. Elderly patients were more likely to progress toward fatal outcome. The healthcare systems should pay special attention to them in order to effectively manage possible future pandemics.

### Key messages:

- The COVID-19 mortality reduction highlights an improvement of health care; the elderly remains at major risk of death.
- Providing pandemic prevention and care models focused also on vulnerable groups is a major public health challenge.